

WHAT IS CLAIMED IS:

1. A process for making a granular detergent composition characterized by the steps of:
 - a) providing at least one granular feed stream;
 - b) passing said granular feed stream into a fluidized bed granulator;
 - c) at least partially agglomerating said feed stream in said fluidized bed granulator to form detergent agglomerates;
 - d) sizing said detergent agglomerates to separate oversized particles from said detergent agglomerates; and
 - e) re-introducing said oversized particles to said process.
2. A process for making a granular detergent composition characterized by the steps of:
 - a) providing a granular feed stream characterized by at least at least two particles selected from the group consisting of spray dried detergent granules, wet detergent agglomerates, dry detergent agglomerates and detergent adjunct ingredients;
 - b) passing said granular feed stream into at least one pre-mixer to form a detergent premix;
 - c) optionally screening said detergent premix to separate oversized particles;
 - d) passing said detergent premix into a fluidized bed granulator;
 - e) at least partially agglomerating said detergent premix in said fluidized bed granulator to form detergent agglomerates;
 - f) sizing said detergent agglomerates to separate oversized particles from said detergent agglomerates;
 - g) optionally passing said detergent agglomerates to a finishing step; and
 - h) re-introducing said oversized particles to said process.
3. The process for making the granular detergent composition of any of Claims 1-2, further characterized by the step of milling said oversized particles before re-introduction into said process.
4. The process for making the granular detergent composition of any of Claims 1-3, wherein said oversized particles are re-introduced into any unit operation in said process or into said fluid bed granulator.

5. The process as claimed in any of Claims 1-4 further characterized by the step of passing said granular feed stream through at least one pre-mixer before introduction into said fluid bed granulator and re-introducing at least a portion of said undersized particles to said at least one pre-mixer.
6. The process as claimed in any of Claims 1-5 wherein said fluidized bed granulator is an internally re-circulating fluid bed and undersized particles are re-circulated internally within the fluidized bed.
7. The process as claimed in any of Claims 1-6 further characterized by the step of screening said granular feed stream upon exiting said pre-mixer to separate oversized particles and re-introducing said oversized particles to the process.
8. The process as claimed in any of Claims 1-7 further characterized by the step of passing said granular feed stream through at least two pre-mixers, screening said feed stream upon exiting either or both of said pre-mixers to separate oversized particles and re-introducing at least a portion of said oversized particles in either or both of said pre-mixers.
9. The process as claimed in any of Claims 1-8 wherein said fluidized bed granulator is operated at a flux number within the range of from 2.5 to 4.5.
10. The process as claimed in any of Claims 1-9 wherein said fluidized bed granulator is operated at a Stokes number of less than 1.
11. A process for producing a detergent composition characterized by forming detergent particles wherein at least 50% by weight of said particles have a geometric mean particle diameter of from about 500 microns to about 1500 microns with a geometric standard deviation of from 1 to 2, wherein said particles are formed via at least partial granulation in a fluidized bed mixer/granulator wherein the amount of undersized particle is said process is controlled via the use of said fluid bed granulation and the amount of oversized particles is controlled via sizing and re-introduction to the process.
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